

APPENDIX H

I-PLAN

for

ELEVATION

ELEVATION IMPLEMENTATION PLAN

1. EXECUTIVE SUMMARY

Elevation data are used for a wide variety of local, national, and regional applications that are critical to managing Idaho's natural resources and urban populations. The 7.5-minute 10-meter elevation grid will soon be complete statewide. Collection and distribution of high-resolution elevation data will be based on individual agency needs, but the Idaho Elevation Technical Working Group will implement a network to coordinate and collaborate on high-resolution elevation projects.

2. DESCRIPTION

2.1 Theme Description

Elevation data include spatially referenced vertical positions above or below a datum surface. The FGDC framework includes the elevations of land surfaces and the depths below water surfaces, commonly referred to as bathymetry.

There are many ways to represent elevation, including evenly spaced grids, contour topography lines, and irregular networks. Elevation data are used in a variety of applications for analysis and modeling, often in combination with other digital data themes.

2.2 Vision Statement

The primary goal to complete 10-meter grid spacing digital elevation models (DEM) for the state will soon be achieved. The unit of data is based on the USGS 7.5-minute 1:24,000-scale topographic quadrangle. The raw data files will be housed for public download on the INSIDE Idaho data node (Idaho's GIS data clearinghouse). Idaho will also develop a collaboration network to coordinate collection and sharing of high-resolution elevation data as opportunities arise. Additional seamless elevation datasets for the state are currently available online from USGS, including 30-meter posting Shuttle Radar Topography Mission (SRTM) data and 30-meter posting National Elevation Dataset (NED).

2.3 Interdependencies

Available 10-meter DEMs are created using a process that incorporates digital hydrography data. These linear stream data control elevation points in the valleys. The DEMs are also used directly to generate digital orthophotos.

Other framework data, such as cadastral, boundaries, and transportation, are often analyzed with elevation data, so it is important that the elevation data align well with other framework data.

3. BENEFITS AND RISKS

3.1 Benefits and Driving Issues

Many federal, state, regional, and local government agencies require medium-resolution elevation data for modeling, analysis, and decision-making applications, thus the requirement for completing the 10-meter grid data. High-resolution elevation data is needed for use in many urban and flooding applications, driving collaboration on high-resolution funding and data sharing.

3.2 Risk Analysis

The statewide 10-meter DEM dataset will soon be complete, so many applications can be pursued using this data. Focus can now turn to acquisition of high-resolution elevation data in local areas as need and opportunities arise.

4. INVENTORY

4.1 Stakeholders

The United States Geological Survey (USGS), the United States Department of Agriculture Forest Service (USFS), and the Bureau of Land Management (BLM) have been instrumental in funding the creation of statewide 30-meter and 10-meter posting DEMs. These data are being used by large numbers of organizations, including federal, state, local, tribal, educational, and private entities.

4.2 Data Sources

Original 10-meter DEMs are being stored and distributed to the public through INSIDE Idaho. The 30-meter NED and 30-meter SRTM seamless elevation data are available for public download from the USGS seamless data website. NED data are a filtered mosaic of best available elevation data, which is 10-meter for most of Idaho. SRTM is elevation data collected during a NASA shuttle mission in 2000. USGS is also creating a seamless data website to warehouse and distribute high-resolution elevation data, which Idaho can use to pursue its own high-resolution elevation program.

4.3 Current Status

The final 10-meter DEM has been funded. When finished it will complete the statewide coverage. Forty-three 10-meter DEMs are funded and in progress. Several hundred 10-meter DEMs need to be acquired from USGS and loaded to the INSIDE Idaho server. By July 2003, all 10-meter DEMs will be available on the INSIDE Idaho server.

4.4 Business Needs

Elevation data are needed for multiple natural resource and urban applications. Some potential applications include forest fire assessment, mitigation and recovery strategies, line-of-site calculations, transportation planning, and watershed management, as well as modeling and mapping.

4.5 Challenges

The challenge is to develop a communication network to coordinate funding and sharing high-resolution elevation data as opportunities arise.

5. STANDARDS

Standards for 30-meter and 10-meter USGS DEMs are described in the USGS *National Mapping Program Technical Standards for Digital Elevation Models*, dated January 1998.

6. IMPLEMENTATION STRATEGY

6.1 Implementation Approach

A data partner will be found to complete the one remaining 10-meter file, ensuring statewide 10-meter DEM coverage by August 2003. A derived shaded-relief dataset, the 30-meter NED, and the 30-meter SRTM datasets for the state will be considered for storage and distribution from INSIDE Idaho. The Idaho Elevation Technical Working Group will meet with INSIDE Idaho representatives to discuss establishing a network to communicate opportunities for acquiring and sharing high-resolution elevation data.

6.2 Implementation Team

Volunteers from the Idaho GIS community who serve on Idaho's Elevation Technical Working Group will continue to coordinate elevation implementation issues discussed in the implementation approach section.

6.3 Data Development

The 10-meter elevation data are nearly complete and will not be updated on a planned cycle. High-resolution data would be developed as needed by individual agencies or by groups of agencies if a common need exists. Elevation data will be replaced with high-resolution elevation data as it is acquired and made available. The update cycle for the high-resolution data will depend on project needs.

6.4 Data Maintenance

The maintenance strategy is to develop a network to communicate and collaborate on funding to obtain and share local high-resolution elevation data. It will be the responsibility of the agency or collaborating agencies to develop the local data to provide it to INSIDE Idaho.

6.5 Data Distribution

The data will be available through INSIDE Idaho and the USGS seamless data website.

6.6 Implementation Schedule

The 10-meter dataset will be completed and available through INSIDE Idaho by August 2003. High-resolution data will be developed for specific agency and project needs.

6.7 Cost Estimates

Approximately \$1,173,700 has been spent to create statewide 10-meter elevation data.

7. RECOMMENDATIONS

7.1 Recommendations for Institutional and Financial Initiatives

Agencies developing new high-resolution elevation data should discuss cost-sharing agreements with other interested agencies as opportunities and needs arise.

7.2 Recommendations for Stewardship

INSIDE Idaho will distribute the 10-meter elevation data. USGS will maintain seamless elevation data at other scales. Storing and distributing elevation data at other scales through INSIDE Idaho will be discussed in the future.

7.3 Recommendations for Legislative Initiatives

None at this time.

7.4 Recommendations for Policy, Rule and Procedural Changes

None at this time.

7.5 Recommendations for Standards

The recommended standard is the USGS DEM standard for the 10-meter grid data. Data obtained from the USGS seamless website are delivered in ArcGRID format.

8. PLAN UPDATE CYCLE

This plan will be reviewed at least annually and updated if appropriate.